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ABSTRACT

This paper is intended to serve as a stimulant to further efforts to interrelate Jean Piaget's ideas on cognitive development with the broad perspective on reading developed by Peter Spencer, the founder of the Claremont Reading Conference. The three sections of the paper deal with the following areas: an analysis and comparison of Piaget's and Spencer's ideas on the relationship between the individual and the environment, the representation of reality as conceptualized by the two men, and the implications the views of the two hold for the development of a reading curriculum. (FL)

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THE PSYCHOLOGY OF READING IN EARLY CHILDHOOD: A COMPARISON OF THE IDEAS OF JEAN PIAGET AND PETER SPENCER

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Introduction

Although Jean Piaget has written on such diverse topics as epistemology, biology, logic, child psychology, and the history of science, he has not addressed himself to the subject of reading. A recently published 900-page anthology of Piaget's writings does not, for example, contain a single passage devoted to this topic.[1] Yet it can be proposed that Piaget's fecund research, especially on the subject of cognitive development in children, holds a wealth of virtually untapped insights into the reading process. In an article appearing in the International Reading Association's Theoretical Models and Processes of Reading, Irene Athey states:

> One may speculate that the application of Piagetian cognitive theory to reading may open up a highly fruitful field of inquiry. Even at the practical level it seems reasonable to suppose that an understanding of the child's cognitive development in terms of Piaget's concepts would have implications for the kinds of reading materials suitable for different age groups. It would be premature to suggest what these might be, however, until a more complete rapprochement between cognitive psychology and the psychology of reading occurs.[2]

Congruent with Athey's proposal, the goal of this paper will be to build bridges between Piaget's work and that of Peter Spencer, the founder of the Claremont Reading Conference and an educator who, in contrast to Piaget, has devoted a great deal of attention to the reading process. It is the contention of this paper that a comparison of the ideas of Spencer and Piaget will provide many insights into the reading process and will serve as a stimulant to further efforts to interrelate Piaget's ideas on cognitive development with the broad perspective on reading developed by Spencer and articulated by the Claremont Reading Conference. A synthesis of Piaget's

and Spencer's ideas can also be utilized to build an alternative model with which to challenge the behaviorist/industrial psychology orientation that currently permeates reading instruction in the public schools.

This paper will be divided into three sections. Section one will consist of an analysis and comparison of Piaget's and Spencer's ideas on the relationship between the individual and the environment. Section two will focus on the representation of reality as conceptualized by Spencer and Piaget. Section three will explore some of the implications the views of Piaget and Spencer hold for the development of a reading curriculum.

I. The Primacy of Transformed Experience

Peter Spencer and Jean Piaget both maintain that a dynamic interaction exists between the individual and the surrounding physical and social environment: They both believe that individuals actively transform or reorganize environmental experiences rather than passively absorb those experiences. In Spencer's conception of this dynamic interaction, reading is the central metaphor. For Piaget, adaptation and organization are the key metaphors for this process.

All experiences, according to Spencer, play a part in the reading process. Thus, Spencer's definition of reading is very broad: It is "the process of making discriminative (adaptive) responses with regard for any and all forms of sensory stimulation."[3] Consistent with this definition, reading behavior is associated with all of the sensory processes. Spencer proposes that the individual continuously engages in visual, aural, tactile, thermal, olfactory,

and kinesthetic reading of the physical, social, and symbolic environment. The definition of reading should not be limited just to printed words, Spencer argues, since the process of sensing and responding to all environmental stimuli is basically the same.[4]

Spencer describes the interaction that takes place between the individual reader and the surrounding environment as a four-stage process: stimulation, reception, perception, and adaptive behavior. At each step the individual plays an active role. At stage one, stimulation, the reader makes "selective choices" from among the myriad sources of stimulation in the surrounding environment.[5] At stage two, reception, the reader's receptor organs convert environmental stimulation into electrochemical impulses transmittable to the central nervous system.[6] At stage three, perception, neural impulses are "transformed into states of mental awareness and given meaningful status."[7] At stage four, adaptive behavior, the reader reads his or her own response behavior; the individual engages in a self-regulating and monitoring process and so analyzes the adequacy of a given response.[8]

It is stage three, according to Spencer, that is the heart of the reading process in that perception involves "giving meaning to mental awareness" through recall, cognition, and creative imagination. Perception is not a passive process in which the brain receives information in an undigested form but, rather, is an active process of meaning construction. Given a stimulus, the perceiver organizes the data from that stimulus, creates meaning, and draws inferences.[9] At each of the four reading stages, it is what the individual does to environmental experiences that matters, not the experiences per se.

The human organism does not, according to Spencer, simply respond to environmental stimuli. Instead, the individual transforms these experiences and actively creates meaning out of them.

Spencer's holistic view of the reading process has been elaborated on by many of the contributors to the Claremont Reading Conference. Elliot Eisner, for example, contends that humans are biologically predisposed to create meaning out of the myriad stimuli to which they are exposed. Following Spencer, Eisner maintains that we come to know about the world through all of the sensory modalities at our disposal. As a result of the interaction of these modalities with the surrounding environment we create meaning, construct patterns, and build worlds that transcend the stimuli presented to the senses.[10] Similarly, Roach Van Allen posits that reading involves the responses an individual makes to a multitude of environmental stimuli, including art, music, films, and stories. These responses go beyond mere comprehension to include the assimilation and integration of ideas into a total pattern of "creative living."[11] Malcolm Douglass, the current director of the Claremont Reading Conference, proposes that reading needs to be viewed as a holistic process operating in a broad context, and toward this view the Claremont Reading Conference continues in the Spencerian tradition.[12]

Spencer's views of the relationship between the individual and the environment as well as his integrated and holistic conception of reading are derived from Gestalt, or field, psychology. Piaget's theory of cognitive development, although not based on Gestalt psychology, shares many similar assumptions. (Indeed Piaget has written that had he known of that school of psychology in his early

years, he too would have "become a Gestaltist.")[13] An overview and comparison of Gestalt psychology and Piaget's theory will serve, therefore, to highlight the similarities between Piaget and Spencer.

Gestalt psychology is most closely identified with the German psychologists Max Wertheimer,[14] Kurt Koffka,[15] and Wolfgang Kohler.[16] In this country, Gestalt psychology was further developed by Kurt Lewin,[17] Raymond Wheeler, and Francis Perkins[18] and is often referred to as field theory. According to Gestalt psychologists, individuals organize their experiences into patterns, into "things as a whole." (In German, Gestalt means "form," "configuration," or "organized pattern.") Experiences are not perceived in a chaotic fashion, but rather are given unity, organization, and stability. For example, a square constructed of either dots or lines is perceived in terms of its squareness, its whole quality, rather than as individual dots or lines. Another example of this patterning is the propensity to perceive part of a pattern as foreground and part as background. This is illustrated in Figure A, a reversible figure-ground pattern. The Gestaltist maintains that this pattern can be perceived either as a pair of faces or as a vase, but not as both simultaneously; one pattern is always the figure and the other the ground.[19]

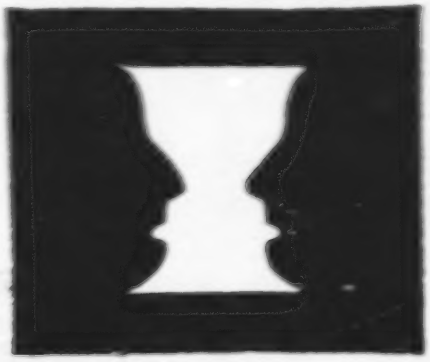

Figure A

The tendency for individuals to structure what they perceive into organized wholes can be further illustrated by the three Gestalt principles of proximity, similarity, and closure.

According to the principle of proximity, stimuli which are close together in space tend to be perceived as forming a whole.[20] This principle is illustrated in Figures B and C. To the individual perceiver, the dots in Figure B appear to be arranged in horizontal rows, while in C they appear as vertical columns. These differing perceptions according to Gestaltists, result because of the tendency of the human brain to organize stimuli into wholes on the basis of perceptual closeness, or proximity.

Figure B

Figure C

The principle of similarity, that stimuli which are similar tend to be perceived as forming a whole group,[21] is illustrated in Figure D. In this case, the important factor in determining whether the individual perceives horizontal or vertical lines is not proximity, since the dots are all equally spaced. Rather, the influence of similarity is paramount; the individual perceives rows of dots and rows of small circles, organizing like items into greater wholes. (See Figure D, next page.)

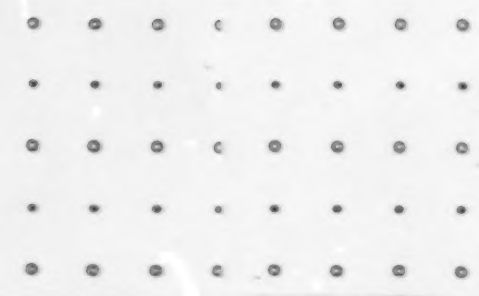

Figure D

The principle of closure, the tendency to fill in the gaps perceptually when a stimulus is incomplete,[22] is illustrated in Figure E. In this case, the perceiver fills in the gaps of the incomplete figure and perceives a dog. Like proximity and similarity, closure creates a whole organizational pattern out of separate elements.

Figure E

In each of the preceding illustrations, the way in which a part is judged depends upon the setting of the other parts. Wheeler and Perkins have captured the essence of this whole-part relationship in two laws: the law of field properties and the law of derived properties. The former states that "the whole is more than the sum

of its parts," while the latter states that "parts derive their properties from wholes."[23] We perceive the environment as a whole because all of the sensory modalities work in conjuction toward that end.[24]

The emphasis Gestalt psychologists place upon unity and wholeness is reflected in Spencer's orientation toward reading. Spencer points out, for example, the active role of the reader in making figure-ground distinctions. He writes:

> The process of structuring a stimulus situation in such a manner that the separate entities become identified is basic in perceptual behavior. It consists in distinguishing from within the total situation what some thing <u>is</u> as contrasted with what it <u>is not</u>. This has been aptly termed a figure vs. ground differentiation.[25]

As do Gestalt psychologists, Spencer maintains that the individual, through all of the sense modalities, continuously structures the surrounding environment. Like Wheeler and Perkins, Spencer stresses the active role of the individual in organizing that which is perceived, creating meaning out of selected stimuli.

Piaget also maintains that the individual actively structures or organizes the surrounding environment, creating meaning out of the stimuli presented to the senses. Piaget, however, places greater stress upon how these structuring tendencies change with developmental stage than do the Gestaltists. Whereas Gestalt theorists are structuralists primarily concerned with the nature of perception, Piaget is a developmental structuralist primarily concerned with the nature of knowledge.[26]

Piaget's major life interest is epistemology, that branch of philosophy that deals with the origins, development, and nature of

knowledge. To answer basic epistemological questions, he chose to study children. Piaget is interested in studying how children's knowledge changes with maturation, how these changes can be categorized into a series of cumulative developmental stages, and how these stages correspond to different ways of structuring reality.

To understand Piaget's theory of genetic epistemology it is important to consider the processes underlying the individual's interaction with the surrounding environment.

To start with, Piaget believes that the individual adapts to environmental experiences through the complementary processes of assimilation and accommodation.[27] Assimilation is the process whereby the individual filters, modifies, and incorporates environmental experiences into existing cognitive structures. Thus, when the individual encounters new information arising from physical or social experiences, these experiences are assimilated or modified according to underlying cognitive structures, or "schemes." By contrast, accommodation is the process whereby the individual transforms or modifies the internal cognitive structures themselves to adapt to environmental experiences. Thus, accommodation involves building new cognitive structures to deal with experiential realities. Piaget maintains that adaptation, involving assimilation and accommodation, is a "functional invariant," a continuous process of dynamic interaction between the individual and the surrounding world.[28] Like the Gestaltists, therefore, Piaget does not view the environment as something that "happens" to the individual, a stimulus that triggers a response. To the contrary, the individual searches for meaningful elements in the environment, assimilating those

elements to existing structures and accommodating those structures to make further assimilation possible. The individual actively interacts with the environment and transforms it.

Also like the Gestaltists, Piaget maintains that the individual continuously organizes the world into more complex wholes. Not only do individuals adapt to environmental experiences through assimilation and accommodation, but they also structure those experiences into coherent systems.[29] In contrast to the Gestaltists, however, Piaget focuses more directly upon the epigenesis of cognitive structures, how the organizing tendencies of the human mind change with developmental stage. Piaget has outlined four such stages — sensorimotor, preoperational, concrete operational, and formal thought — each of which corresponds to a different way of structuring reality.[30] Thus, Piaget's research has focused not just on how the individual structures the world but upon the qualitative differences in the way in which individuals organize reality depending upon their cognitive-developmental stage.

Cognitive-stage development, according to Piaget, is explained by four factors: maturation, physical experience, social experience, and equilibration.[31] An exploration of these factors illuminates further similarities between Piaget and Gestalt psychologists, and between Piaget and Spencer as well.

Maturation of the central nervous system plays an indispensable role in the development of more elaborate cognitive structures, according to Piaget, and individual biological differences influence the rate at which the major stages of cognitive development emerge, though the sequence of those stages is universal and invariant.

Biological maturation is, however, insufficient by itself to explain structural development. Piaget believes that the attainment of a given cognitive structure is also influenced by the physical and social environment to which the individual is exposed. Physical and social factors will be discussed later, but at this point it can be noted that Piaget's conception of development as being the result of a complex interaction between innate maturational factors and environmental experiences parallels the views of field theorists such as Wheeler and Perkins.

In Principles of Mental Development, Wheeler and Perkins maintain that development is the result of a biologically based "growth potential" acting in concert with environmental stimuli. Like Piaget, they contend that maturation of the central nervous system is crucial to the overall development of the individual but that such development is also critically influenced by stimulation from the external world. The dynamic interaction between internal maturational processes and the external environment is described by Wheeler and Perkins in the following way:

> Every performance of man or animal must have been acquired through maturation; every performance is dependent at all times upon a growth potential, and the growth potential depends upon environmental stimulation.[32]

This interactional view is congruent with Piagetian theory as to the relationship between maturational factors and environmental experiences. It is also consistent with Spencer's orientation toward reading. In describing the interaction that takes place between the individual's innate endowment as a reader and the surrounding environment, Spencer writes:

> That one will read is assured by nature. But, what one reads and how well the reading acts are performed are heavily affected by one's environment and one's experiencing.[33]

A second factor that Piaget believes helps explain the development of cognitive structures is direct experience of the physical world. Piaget posits that the individual comes to understand the world by acting upon objects and materials, by experiencing the physical world through all modalities, including the visual, auditory, olfactory, tactile-kinesthetic, and proprioceptive.[34] He gives the example of a five-year-old boy placing ten pebbles in a row and discovering that their number is the same whether they are counted from right to left, left to right, while in a circle, or when placed in some other configuration. Piaget writes that the discovery that sum is independent of order "consists in abstracting that observation from the actions of enumerating and ordering, even though the 'reading' of the experiment was directed at the objects, since those properties of sum and order were in fact introduced into the objects by the actions."[35]

Wheeler and Perkins also maintain that the individual experiences and structures the world through all of the sense organs. Sight, audition, and touch, for example, act interdependently to experience objects as part of a total situation.[36] Spencer's views of reading are analogous. He too believes that the individual continuously reads the physical and social world directly through all of the senses, which act in concert to select and receive external stimuli for the creation of meaning.[37]

The third factor in Piaget's theory of cognitive development is

social experience. Social interaction is, according to Piaget, an important source of stimulation for the individual. For example, without the opportunity to see the relativity of perspectives, made possible by social interaction, children can remain locked into their own egocentric beliefs. A clash of ideas among children can, therefore, lead to an awareness of different points of view, an apperception that can facilitate structural development.[38]

Social interaction also plays an important role in Spencer's orientation toward reading. Spencer contends that we must broaden our view of reading to include the reading of the social environment. In his book Reading Reading, Spencer gives several examples of individuals effectively reading the "nuances of social relationships."[39] Just as Piaget sees social interaction as an important stimulant for structural development, Spencer views social interaction as a vital part of reading.

Equilibration is the fourth, and most crucial, factor in Piaget's explanation of structural development. Piaget defines equilibration as the continuous self-regulatory, balancing, and compensating process that occurs between the individual and the surrounding environment.[40] He believes that it is the most important factor in development because it serves to coordinate the other three factors; namely, physical experiences, social experiences, and maturation. An example of equilibration is a young child's attempt to master the concept of conservation of substance, the realization that a given amount of material does not change in quantity simply because it is shaped differently. Before this concept is attained, the young child believes that a ball of clay, for example, increases

in quantity as it is elongated into a sausage shape. Prior to conservation, the child will focus solely upon the length of the clay, or its width, or will shift between these two perceptual variables without relating a change in one dimension to a change in the other. With the attainment of the concept of conservation, however, the child will grasp the idea that width and length are related: When a ball of clay is made longer it also gets thinner, and thus the quantity of substance remains the same. In gradually achieving this level of understanding, by compensating for a change in length by relating it to a change in width, the child is undergoing a self-regulatory process, achieving a balance between assimilation and accommodation, between understanding environmental experiences on the basis of existing structures and building new structures to incorporate new realities. Piaget believes that the individual's intellectual processes are never at rest but are continuously attempting to achieve harmony with the surrounding environment, constantly trying to understand the world, to give it stability and coherence.[41]

This emphasis upon the continuing dialectic that occurs between the individual and the environment also characterizes Spencer's orientation toward reading. Although he uses somewhat different terminology, Spencer maintains that the child as a reader of experiences continuously engages in adaptive behavior in response to environmental stimuli. He describes the reading process as "the act of sensing a stimulus situation, of interpreting that which is sensed, and performing an adaptive response which is designed adequately to cope with the sensed situation in a manner that is

advantageous to the reader."[42] The idea that the reader engages in a self-monitoring process to check the adequacy of his or her own responses is very close to Piaget's concept of equilibration. In both perspectives, the child is seen as being involved in a dynamic interaction with the surrounding world, acting upon the environment and modifying future behavior as a consequence of that action. Spencer writes:

> Reading the nature and adequacy of one's response behavior constitutes an extremely important part of reading behavior. What one does in response to stimulation becomes associated meaningfully with these situations. This is the essence of the process of "learning thru doing."[43]

Spencer's reference to Dewey's famous phrase indicates the theoretical proximity of Spencer not only to Dewey but to Piaget as well, since Dewey and Piaget share many of the same assumptions. During an interview, Piaget compared himself to Dewey when asked to respond to a hypothetical situation in which a teacher presents a science lesson to a class of young children.

Interviewer: What if the teacher were to demonstrate this experiment to the class?
Piaget: It would be completely useless. The child must discover the method for himself through his own activity.
Interviewer: That sounds very much like John Dewey's concept of learning by doing.
Piaget: Indeed it does; John Dewey was a great man.[44]

Spencer fits comfortably into the Piaget-Dewey world view. Piaget maintains that individuals do not simply copy external reality but rather actively transform and organize it in accordance with the mental structures that exist at a given stage in the individual's developmental history. Piaget does not believe that reality is "out there" waiting to impress itself on a blank slate. Instead, reality is determined by the individual's actions upon it and is endlessly

under construction. Spencer, like Piaget, maintains that the locus of meaning resides within the individual reader rather than in the external environment. Like Piaget, Spencer believes that personal meanings are constantly being created by individuals through their action upon the material and social world.

In commenting upon the continuing theme of the Claremont Reading Conference founded by Spencer, Douglass contends that although terminology has been slightly altered over the last four decades, the basic position on reading first articulated by Spencer has remained the same. Douglass suggests that "the emphasis might best be expressed by describing reading as the process of creating meaning for sensed stimuli."[45] This stress upon the role of the individual in formulating meaning by transforming experience is at one with Piaget's orientation toward the relationship that exists between the individual and the external world.

II. The Representation of Reality

Peter Spencer and Jean Piaget both believe that the individual continuously perceives and creates myriad symbolic representations of reality. Both men also maintain that such representations are an outgrowth of direct experience and that the locus of meaning is in the individual rather than in a particular symbol that is used to represent that meaning.

According to Spencer, any stimulus that calls to mind something other than its own identity is a symbol. Symbols may be concrete, such as flowers when used to communicate affection or clouds when read as indicators of a future storm; replicative, such as photographs, models, or mimetic imitations; schematic, such as maps, charts, or diagrams; or spoken and written words. The indirect experience of reality through such symbols is designated by Spencer as secondary reading. He writes:

> Secondary reading is an integral part of human behavior. It must not be restricted to concern for any special type of symbolic stimuli nor to the mere sensing and recognition of symbolic situations. It calls for abilities to recall and associate ideas which are symbolized by the stimulus situation and to construct new ideas from the context which is being read.[46]

Spencer thus differentiates between primary and secondary reading. The former consists of "the reading of things directly and in their own right," for example, the reading of an apple through the sense of taste, touch, smell, and vision. Secondary reading, on the other hand, is "the reading of symbols of ideas-about-things."[47] In contrast to primary reading, secondary reading involves "clues," "devices," or "symbols" for stimulating the recall of actual experences.[48] Paintings, photographs, spoken or written words used to evoke "apple" are symbols used in secondary reading. Primary reading, or direct experience, however, constitutes the wellspring for these symbols. Spencer believes that it is the richness of direct experience,

or primary reading, that guides the effectiveness of secondary reading.[49] Unless a reader can associate meaningful experiences with arbitrary symbols, such as spoken or written words, communication through symbols does not occur. This is because "words are not ideas. They stand for ideas, but they are impotent to do that unless the reader possesses the requisite ideas with the symbols."[50]

Piaget also maintains that meaning is not inherent in symbols but instead has to be provided by the individual, who interprets those symbols from his or her own experience.[51] Thus, like Spencer, Piaget believes that symbols are originally derived from active experience in the real world. Piaget, however, has traced the origins of representation to a distinct period of early childhood.

Although young infants, according to Piaget, are only capable of actions in the here and now, by the time children reach the "inventive" or last substage of the sensorimotor period (approximately eighteen to twenty-four months) they are increasingly capable of coordinating events and objects in the past, present, and future. This coordination is made possible by the emergence of the "semiotic function," or symbolic representation. Piaget contends that representation is the presentation, through symbols, of what is perceptually absent. In the child's world, meaning can now be understood as the relationship between a signified, the real object or action, and a signifier, the symbolic representation which stands for it. As children mature, they become increasingly adept at communicating about experiences through symbols rather than through direct physical action. Piaget distinguished five major forms of symbolic representation: deferred imitation, symbolic play, drawing,

mental imagery, and verbal evocation.[52]

Deferred imitation is one of the first ways in which children demonstrate representational abilities, Piaget believes. Children younger than two years of age can, for example, imitate another person's behavior when that person is no longer present and at a point in time long after that behavior was first observed. Piaget cites the example of his own daughter, Jacqueline, at sixteen months, who one day watched a playmate throw a temper tantrum involving foot stomping and howling. The next day, Piaget's daughter stood up in her playpen, stamped her feet, and howled just as she had seen her friend do the day before.[53] According to Piaget, without a symbolic means of learning and then recalling the temper tantrum actions, his daughter could not have imitated them a day later. Piaget contends, therefore, that his daughter formed an internal representation of her playmate's behavior, which she was later able to reproduce. Piaget considers such deferred imitation, imitative movements separate from the context of their original perception, to be the first manifestation of symbols, the use of one's own body as a signifier.

A second form of representation, according to Piaget, is symbolic play, or the "game of pretending." He proposes that symbolic play starts toward the end of the sensorimotor stage when children begin to make believe that they are sleeping, crying, eating, singing, or invent other imaginary situations. Piaget cites the example of Jacqueline, at fifteen months, who invented her first symbolic game by pretending to sleep. She sat down, smiled broadly, closed her eyes, moved her head to one side, put her thumb in her mouth, and held the corner of a tablecloth, using it as a pillow.[54]

Piaget interprets these behaviors as demonstrations of the playful use of concrete symbols. He contends that his daughter's laughter and her attitude of pretense showed that she realized that the tablecloth, for example, was not really a pillow. Instead, it was a representation of the pillow, a concrete object that signified something else. Similarly, a child pushing a box and imagining it to be a car is symbolically representing the car by the box, linking the signifier and the signified.[55]

Piaget sees drawing as a third form of representation. He proposes that the first form of drawing can be seen in the scribbling done by the two-year-old. This early scribbling is soon followed by attempts to depict objects and events from memory, however poorly this may be done from the perspective of adult "reality." Although young children vary tremendously in their ability to produce "photographic" drawings, their attempts at representing people, objects, and events through art is an important index of symbolic and cognitive development. Piaget has observed that when young children first attempt to draw pictures of people and scenes, they usually just place related elements near each other. For instance, legs come out of the head, or buttons are arranged beside the body in drawings of human figures. By age six or seven, children begin to draw more realistically, but they still tend to put into their drawings what they "know" to be there, rather than what they see. Human figures drawn in profile, for example, still have two eyes and two ears. Not until age nine or ten, according to Piaget, do children's drawings display a three-dimensional spatial perspective.[56] Piaget believes that drawing, like deferred imitation and symbolic play, is linked to the child's emerging cognitive structures and that it both

reflects and contributes to the child's knowledge of the world. He states:

> Younger children draw merely to represent objects, whereas older children include their drawings in systems of wider intellectual significance....Creative imagination, which is the assimilating activity in a state of spontaneity, does not diminish with age, but, as a result of the correlative progress of accommodation, is gradually reintegrated in intelligence, which is thereby correspondingly broadened.[57]

Piaget designates mental imagery as a fourth form of representation and conceives of this "semiotic instrument" as a transformation and interiorization of deferred imitation.[58] Whereas deferred imitation is the overt representation of an object or event through the child's own bodily movements, a mental image is an internal equivalent of that external object or event without the attached physical movement. A child who waddles like a duck he or she has seen the previous day, is representing the world through deferred imitation. By contrast, the purely mental construction and representation of the concept of "duckness" is mental imagery. Thus, mental images constitute representational constructions based on the interiorization of actions and experiences, being "necessary in order to evoke and think [about] what has been perceived."[59] Unlike deferred imitation, which is observable by others, the construction of mental images is an entirely internal process, belonging to the private and unobservable mental life of each person. "The mental image remains individual...a translation of personal experiences."[60] Because of the personal quality of mental imagery, Piaget includes dreams within this category of representation, examples of which he has recorded in children as young as two years of age.[61]

Piaget differentiates between reproductive mental images and anticipatory mental images. The former are evoked sights stemming from previous perceptions and experiences, while the latter involve the imagination of transformations in the future, predictions of what will happen prior to actual observation. The ability to reproduce these different mental images depends upon the child's developmental stage. The preoperational child (aged approximately two to seven) evokes images that are exclusively reproductive. With the onset of concrete operations, at approximately age seven, children begin to form anticipatory images involving predictions about future experiences.[62]

Piaget's fifth form of representation is verbal evocation: the ability to verbally represent events that occurred in the past. According to Piaget, the child begins to use words to stand for absent objects or people or past events at approximately two years of age. Prior to this time, the words that are used by the young child accompany ongoing sensorimotor actions. When words begin to function to evoke a past action or experience rather than merely to be a part of that action, then they have acquired the function of representation, of new presentation.[63] Piaget gives the example of his twenty-three-month-old daughter who described a trip from which the family had just returned. She said, "Robert cry, duck swim in lake, gone away." These events had occurred sometime previously, and Piaget's daughter had not only been able to remember them, but she also was capable of using words to stand for those past events.[64] Piaget contends that verbal evocation, language, should be seen as only one of the many manifestations of the symbolic function, a kind

of subsystem within a broader symbolic capacity. He stresses that language behavior is found within the same context as the other forms of symbolism previously discussed, and that it is used by the developing child in a manner analogous to these other semiotic instruments. Moreover, like other forms of representation, language has its roots in sensorimotor activities. Piaget believes that actions upon the physical and social world are the foundation for concept development, with language being an outgrowth of that development. In short, language does not constitute the foundation for cognitive development but is, on the contrary, structured by it.[65]

Spencer also stresses the fact that individuals possess numerous ways of symbolically representing reality. Like Piaget, Spencer considers mental imagery, for example, an important form of representation. He writes:

> The memory image of any perceived thing serves as a symbol for that thing. When contact with a given stimulus recurs, there is a comparison of the present image with the symbolic mental image resulting from previous contacts with it.[66]

Further, Spencer makes a distinction parallel to Piaget's distinction between reproductive and anticipatory mental images: Spencer maintains that images serve not only to evoke past experiences but are also used to develop inferences about the future and to evoke creative imagination.

Also like Piaget, Spencer believes that language symbols are premised on individuals' actions and experiences with the world. Spencer maintains that "language elements are merely symbolic representations of ideas-about-things...[and are] most effectively derived from direct experience with things in their own right."[68] Spencer's

ideas on the relationship between concept development and language are also virtually identical to those of Piaget. Spencer writes:

> It is very important that we recognize that concept formation does not await the appearance of names or labels that language development provides. Language serves only to facilitate and to implement a process that has already begun on the non-symbolic level.[69]

Although both Piaget and Spencer agree that spoken language is but one form used by children to represent the world, only Spencer draws a direct connection between spoken and written words. Spencer proposes that, as modes of communication and expression, the symbols in both of these systems stand for ideas derived from experience, and both types of symbolic representation must be sensed, interpreted, and given meaning by a creative reader.[70]

In addition to Spencer, many contributors to the Claremont Reading Conference have also proposed a close relationship between spoken and written language. For instance, Douglass maintains that the capacity to read and write is a natural extension of another human symbolizing ability, namely, oral language. Douglass argues that educators should not, as they often do, isolate language in its spoken form from the reading and writing of language symbols.[71] Collier contends that both reading and writing are expressions of meaning that have been extended from oral language.[72] Goodman proposes that "literacy has to be the natural extension of language-learning, not something new, not something different, but something that in fact grows out of and builds on the natural human tendency to communicate."[73]

This conception of a relationship between oral and written language is consistent with Piagetian theory, though Piaget himself

has not made this connection. Both writing and reading can be seen, however, as two additional forms of representation which are closely related to each other and which constitute extensions of the five modes of representation detailed by Piaget.

Piaget's theory suggests that a symbolic representation, such as a written word, must be transformed and given meaning by an active perceiver. The act of reading printed words can be viewed, in Piagetian terminology, as the assimilation of those words into the cognitive structures that exist at that point in the individual's developmental history. From this perspective, meaning resides not in the printed word itself but rather in the individual, the active perceiver who filters the words through existing cognitive structures. The maturational level, previous physical and social experiences, and self-regulatory or equilibration process within the individual are what determine the meaning of words, not the arbitrary set of squiggles themselves.

Drawing further upon Piaget's theory, it can be argued that individuals accommodate or modify their cognitive structures during the act of reading. An eight-year-old boy reading the book Make Way for Ducklings,[74] for instance, is actively assimilating the story into past experiences with real and representational ducks, and with parks, ponds, policemen, motorists, and the myriad other elements in the story. The child is also accommodating or rebuilding his cognitive structures, adding to his knowledge of the world through this reading act. Even though Make Way for Ducklings contains parts that do not conform to "adult reality," this is not unfavorable for the child's development. Indeed, it is the dynamic tension or dialectic

created between what a child thinks to be true and the fanciful images created by a writer that serve as one important stimulant to cognitive growth, to the building of imagination, to the asking of hypothetical "What if?" questions. Knowing and reading, from a Piagetian viewpoint, can be seen as reciprocal processes: The meaning evoked from that which is read is a function of the individual's knowledge base; the act of reading continuously contributes to that base.

By extension, then, from a Piagetian perspective, a book can communicate different meanings to different individuals or to the same individual at different developmental levels. The often heard statement that a classic novel such as Huckleberry Finn should be read several times throughout one's life is consistent with Piagetian theory. Huckleberry Finn can be assimilated on many levels: as an adventure story, as a social commentary, as a metaphoric statement on the development of personal identity. The meaning of printed words and the knowledge that is derived from them depends not on the words themselves but upon the individual knower. Just as the Greek philosopher Heraclitus claimed that a man could never step into the same river twice because it was never the same river and never the same man, so too the meaning derived from a book by a reader is never the same upon rereading; a single reader's reality is continuously changing.

Thus, from both a Piagetian and a Spencerian perspective, the various representational modes constitute an essential unity. Deferred imitation, symbolic play, drawing, mental imagery, language, writing, and reading all evoke experiences and objects not perceived at that particular moment. Therefore, the young child's active

engagement with the experiential world constitutes the foundation for all forms of representation, including writing and reading. The more varied the encounters the child has with the world, the greater will be the cognitive foundation on which writing and reading are necessarily based. Further, the more the child is encouraged to connect writing and reading to other forms of representation, the greater is the likelihood of success in these two representative modes. The written word is thus a natural extension of other forms of representation, another means for the vicarious experience of life.

III. The Reading Curriculum

Neither Peter Spencer nor Jean Piaget have written a curriculum for the direct teaching of reading. Indeed, from their perspectives there can be no set formulas or packaged programs for the teaching of reading. Rather, the teacher must continuously invent or reinvent materials and procedures. In this sense, the teacher is like the child — constantly reorganizing experiences. Nevertheless, the writings of Spencer and Piaget contain important implications for the development of a broadly based reading curriculum. The remainder of this paper will outline those implications as they apply to early childhood education.

From Spencer's perspective, the reading curriculum should include opportunities for the student to read the surrounding physical and social world through all of the senses: visual, auditory, gustatory, olfactory, and tactile-kinesthetic. Giving children opportunities to hold, feel, feed, watch, and listen to animals; smell, taste, mix, cook, and freeze various foods; hear, play, and feel the sound vibrations of musical instruments; pour and splash water; dig in, pour, and feel wet and dry sand; plant a garden; use tools; take trips to stores, markets, fire stations, museums, and concert halls; and meet people from diverse backgrounds and of various ages are experiences consistent with Spencer's conception of primary reading.

In a reading curriculum based on Spencer's ideas, children also should be encouraged to connect their primary reading experiences to secondary reading, the symbolic representation of those experiences. As a strategy for connecting primary to secondary reading, Spencer suggests a language experience approach in which students are encouraged to experience directly and think about the surrounding physical and social world, and then to talk, write, and finally read symbols

about those experiences.[75] Since secondary reading, according to Spencer, includes but is not limited to printed words, the reading of photographs, models, maps, graphs, charts, and diagrams by students is as much a part of secondary reading as the reading of printed words. Since reading is an active process, children should also generate their own books, plays, drawings, skits, newsletters, musical compositions, and charts. Spencer maintains that secondary reading is taught "whenever there is a discriminative act which involves the use of symbols."[76] For example, the community from which a group of children come can be the focus of field trips and class discussions. The community can be symbolized by the children through block constructions of stores, offices, houses, and fire stations, or through photographs of those buildings. Printed signs can then be attached to the constructions or photographs to identify them, and the class can construct a huge map of the community using the photographs and signs to denote specific points on the map. Having children write stories about their real experiences in the community and then read the stories their classmates have created further promotes the integration of real experiences with various symbolic forms. Likewise, the teacher can arrange for an infant to be brought to the classroom and be bathed, fed, and diapered by a parent. The children can then role-play the situation, fold paper to make diapers for a doll, draw a diagram of how to fold a diaper and write out the directions, and write up the total experience for publication in a classroom newsletter, again connecting the real world to various symbolic forms.

Spencer's connection of secondary reading to the reader's experience of life is echoed by Roach Van Allen, a frequent contributor to the Claremont Reading Conference, who advocates the language experience

approach.[77] He believes that students should be encouraged from the first day in school to share their experiences and ideas through oral language, art, music, dramatics, and teacher-assisted writing. These experiences can then become the foundation for independent writing and reading, through which students become the authors of their own stories and the readers of the stories of their peers.

Malcolm Douglass also proposes that educators capitalize on the interrelationship among oral language, writing, and reading.[78] Reading should not be isolated, as it is so often, from writing, listening, and speaking, nor from other forms of representation such as drawing. Douglass maintains that an effective reading curriculum is one that encourages children to use their own drawings as a basis for writing, and their own writing as a foundation for reading.[79]

Similar implications flow from Piaget's work: The reading curriculum should provide children with a multitude of opportunities to directly experience the surrounding physical and social world, to connect those experiences to various forms of symbolic representation, and to interrelate those symbolic representations to each other.

According to Piagetian theory, direct experience of the real world constitutes the foundation for the representation of the world through symbols. A Piagetian-based reading curriculum should begin, therefore, by giving children unlimited opportunities to act upon and transform the surrounding physical environment: to explore, test, and discuss real objects, real places, and real people. Before being presented with the printed word "banana," for example, the child should first be given numerous direct experiences with this fruit so its salient features can be assimilated through sight, taste, smell, and touch. The teacher cannot substitute "verbal facts" for the discoveries made

by children through direct action. Piaget argues that "teaching means creating situations where structures can be discovered; it does not mean transmitting structures which may be assimilated at nothing other than a verbal level."[80] The more varied the child's experiences with the real world, the more elaborate will be the cognitive structures on which learning to read printed words is necessarily based.

In addition to providing children with opportunities to act upon and manipulate the physical world, a Piagetian-based curriculum should foster social interaction among children. Piaget states:

> When I say "active," I mean it in two senses. One is acting on material things. But the other means doing things in social collaboration, in a group effort. This leads to a critical frame of mind, where children must communicate with each other. This is an essential factor in intellectual development.[81]

Children should thus be encouraged to communicate with each other and with adults on a one-to-one basis or in small groups. This social interaction can occur in the context of cooking or gardening activities, sociodramatic or block play cooperative art projects such as classroom murals, group planning and discussion, and during other activities which involve the exchange of ideas. This curriculum focus is not only consistent with Piaget's views but also with Spencer's idea that teachers must recognize that primary reading of the social environment, of the "dynamics of social relationships," is an important part of the reading process.[82]

As discussed in section two, one important way in which children represent the world, according to Piaget, is through deferred imitation, the use of the body as a signifier for an absent object or event. A reading curriculum thus should include opportunities for children to use their bodies to represent objects, experiences, and concepts before

encountering these things in written form. Children should be encouraged, for example, to waddle and quack like a duck before being asked to read the word "duck," to jump up and down before being asked to read the words describing those actions, and to "do what a ball does" before reading the printed words "ball" or "rolling." Deferred imitation should, of course, be connected to direct experiences (a trip to a duck pond to see live ducks waddling) and to other representational modes (hearing stories about ducks, discussing ducks, drawing pictures of ducks) to develop as many connections as possible between the real world and the various ways of representing that world.

A reading curriculum premised upon Piagetian theory also should encourage children to engage in symbolic play, a second important form of representation. Block play, sociodramatic play, and role taking are all activities that involve symbolic play. Teachers should encourage children to connect symbolic play to other representational forms, such as oral language, writing, and the reading of printed words. Writing in the Claremont Reading Conference Yearbooks, Margaret Smart,[83] Beverly Kilman,[84] and Robert Collier[85] all propose that symbolic play, as conceptualized by Piaget, should be utilized by teachers as a representational bridge between the child's direct experience of reality and alternative ways of representing reality, including, but not limited to, the written word. Encouraging children to present puppet shows and plays and create the dialogue, music, scenery, sound effects and other props for those presentations is an activity consistent with this broad perspective on reading. Similarly, having children draw pictures of their sociodramatic or block play, talk about those pictures and the experiences upon which they are based, dictate stories derived from play

activities, hear about the play of other children, write stories about play activities, and read about the play of others can create an elaborate representational map which can serve as a foundation for further reading.

Drawing, a third form of representation cited by Piaget, also has important implications for the reading curriculum. Reference has already been made to the suggestion by Douglass that teachers should encourage young children to develop connections between drawing and writing and then from these forms of representation to the reading of the printed word. Other forms of art are also germane to the reading process. Encouraging children to make three-dimensional models of objects, prints of objects in clay or sand, clay figures, and paintings of their experiences can help children prepare for other representational experiences, such as reading printed words. The important point is that through art children have an opportunity to represent experiences and objects that they have directly seen, heard, touched, smelled, or tasted. Learning to write and eventually read printed words also requires the child to make connections between symbols and the experiential meanings those symbols are intended to evoke.

Mental imagery, like the other forms of representation already discussed, can be utilized in a Piagetian-based reading curriculum. As indicated in section two, Piaget uses the term "mental imagery" to refer to the purely mental construction and representation of actions and experiences. Because of their personal quality, he has included dreams within this category. A curriculum implication that flows from this is that children can be encouraged to talk about and draw pictures of their dreams (without adult interpretation), write stories about their dreams, make dream books, and read about the dreams of their peers. According

to Piaget, mental images represent the inner world more directly and concretely than do words. Building bridges between the child's inner world of meaning and the external world of arbitrary symbols thus should be one goal of a Piagetian-based reading curriculum.

Speaking about objects, events, and experiences absent in time and space, verbal evocation, is the fifth form of representation discussed by Piaget. Although Piaget points to the primacy of intellectual activities based on actual experiences over "just talking," encouraging children to utilize this representational form as a link between direct experience and other forms of representation, such as writing and reading, is nevertheless important in a reading curriculum based on Piagetian theory. Having children tell stories about their experiences and taping those stories, playing them back, writing them down, and reading them is one way of connecting the child's experiences to various symbolic modes. Using the child's oral language as a basis for personalized reading books and word dictionaries is also congruent with Piagetian theory, as are various activities directed at encouraging children to write about the people, objects, and events of their worlds. Another theorist, David Elkind, citing Piaget's theory of cognitive development, proposes that the greater the opportunity children have to express their experiences and thoughts through oral language and writing, "the better prepared they will be for interpreting the representations of others," and "that the more children write, the more they will get from their reading."[86]

A reading curriculum based on the ideas of Spencer and Piaget does not include word drill, sequenced workbooks, formula phonics, or other programmed materials. In Spencer's view, approaches such as phonics isolate printed words from the experiences those words were meant to

symbolize and divorce reading from the rest of the curriculum.[87] Spencer maintains that all curriculum areas should involve reading and that teachers should help students become readers in the broadest sense of that word. According to Spencer, the "entire curriculum is the developmental reading program."[88] It follows that the classroom should not follow a daily routine in which reading is done only during certain times of the day. Rather, from Spencer's perspective, all curriculum areas—language arts, math, science, and social studies—should be integrated into a holistic reading curriculum.

Spencer's conception of a holistic reading curriculum is a manifestation of Gestalt psychological principles. Wheeler and Perkins, two leading exponents of Gestalt psychology, also reject reading approaches that utilize isolated flash cards or phonics drills that break down the art of reading into isolated bits. They argue that because the human mind perceives the environment as a whole, as a total configuration, the reading of printed words occurs at the whole-story and sentence level. Wheeler and Perkins maintain that children learn to read printed words because they already have a command of oral language and because they already understand sentences as a total configuration expressing a complete thought and stories as integrated wholes possessing a beginning, a direction, and an end.[89] Therefore, teachers should present reading as a "logically coherent whole" and provide children opportunities to construct total meanings from the context of integrated story lines rather than from isolated words or parts of words divorced from context. Specifically, this means that teachers should read imaginative and meaningful stories to children in their entirety and follow this with student reading at the whole-sentence level.[90] From this same holistic conception, Wheeler and

Perkins also reject isolated writing drill as "futile." Like Spencer, Allen, and Douglass, they advocate an integrated approach. They outline this approach as follows:

> The child selects a picture, or draws one himself, and writes a story about it of his own invention. Through an enriched self-expression the child learns the feeling for words and sentences, and frequently, during a period of only six weeks, makes up for two or more years of retardation both in reading facility and range of vocabulary.[91]

In summary, Gestaltists like Wheeler and Perkins argue that learning to read, like other human activities, is a process of sizing up an entire situation, or "field," in order to determine how all the elements fit together. The reading of printed words involves the principle that the whole is greater than the sum of its parts. This holistic conception of language and reading is reflected in Spencer's writing:

> Language must be read as a whole. The meaning of the word, often the choice of pronunciation, is dependent upon its syntactical arrangement in the sentence. The linguistic view of reading has concentrated upon this aspect of the symbol system, emphasizing that each sentence must be read as a functional whole. Not only does the reader interpret the meaning of sentence patterns, but his choice of intonation pattern will further determine his interpretation of a particular sentence or passage.[92]

Piaget also contends that children perceive language in a holistic fashion rather than as isolated bits of sounds and words. In The Language and Thought of the Child, he argues that when a child hears an unknown word it is assimilated as a function of the general schema of the phrase in which it is embedded.[93] Piaget further states:

> Syncretistic understanding consists precisely in this, that the whole is understood before the parts are analysed, and that the understanding of the details takes place—rightly or wrongly—only as a function of the general schema.[94]

Piaget maintains that the words used by children and the words they hear others use are filtered through children's own cognitive

structures. Therefore, a child may understand a verbal explanation in a way not intended by a teacher. Similarly, a child may repeat words that have meanings very different from those of the teacher, though the words themselves are the same. Moreover, one of Piaget's colleagues at Geneva, Hermina Sinclair-de Zwart, has recently conducted research that points out the futility of isolated word drill in facilitating cognitive development. In her experiment, she found that training children to use terms such as "more," "less," or "the same as" did not increase the children's ability to solve problems such as the classic conservation of liquid experiment. This research, according to de Zwart, supports Piaget's claim that cognitive structures are ascendant over language.[95]

Although Piaget has not suggested what his views on cognition and language imply for the direct teaching of reading, interpreters of Piaget's theory are beginning to do so. Hans Furth, for example, argues that schools have traditionally focused on the direct teaching of reading in the early school years at the expense of thinking and problem solving. According to Furth, schools should provide opportunities for young children to develop their "thinking foundation" rather than engage in the direct teaching of reading, a "specialized skill which in the early grade levels has very little to do with thinking."[96] Furth proposes that by nourishing the child's overall cognitive development a point will be reached "when further applications of his thinking skills require the content, variety, and articulation only reading can supply." The child will then, Furth continues, "spontaneously come to realize the value of reading and will learn to read in the easy, self-taught fashion of many preschool youngsters from homes where reading is an everyday activity."[97] Whereas Furth posits that

reading is not a particularly demanding intellectual skill, evinced by the fact that some three- and four-year-old children can read, David Elkind, another Piagetian, ties reading more closely to a specific stage of cognitive development, concrete operations, usually not attained until age seven. Elkind believes that the development of concrete operations, evidenced, for example, by the ability to conserve substance, is a necessary, though not sufficient, requirement for "successful beginning reading."[98] This view is open to question, however, in light of a recent study by Lee Jenkins with a group of children, aged six to nine. Jenkins found that whereas children who were reading independently could indeed conserve, there were some children who were reading independently and yet could not conserve, who had not attained the logical structures that define concrete operations.[99] This finding, which points up the lack of a clear-cut relationship between Piaget's concrete operational stage and reading, is more supportive of Furth than of Elkind. Dolores Durkin's study of children who entered school already reading also indicates that cognitive abilities and the ability to read are not directly related in the way suggested by Elkind. Although there was considerable range in the intellectual abilities of the "early readers" studied by Durkin, they did have one characteristic in common: They all came from homes in which they were encouraged to engage in scribbling and writing, especially on slate boards.[100] From a Piagetian perspective, then, a key factor in independent reading is not necessarily concrete operations but rather opportunities for representational experiences during the preceding preoperational stage. Therefore, the integrated language experience approach to reading, as previously outlined, seems most consistent with Piaget's ideas, just as it does with the ideas of

Spencer.

Spencer argues that the primary motivation for reading should come from within the child rather than be imposed from an external source. He speaks of each child's "inner quest" as the dynamic and activating force in reading behavior. Spencer believes that the goal of educators should be to provide experiences that release the child's inner desire to read the external world.[101] Such a release cannot be achieved through a curriculum that divorces reading from the real world, that isolates content areas from each other, or that relies on drill and teacher-dominated "tell and do" types of instruction.[102] In his book Building Mathematical Competence in the Elementary School, Spencer outlines a philosophy of education in which math, reading, and the rest of the curriculum are totally integrated. At the heart of this philosophy is the belief that education should be inextricably linked to the lives of children, to their personal experiences and social needs, and that learning is a personal process of self-discovery. Competence in reading, math, or any other area is not a commodity that can be "transplanted directly from one mind to another."[103] Rather, teachers should involve "each learner purposefully and willingly in a personal rebirth of the ideas that others have conceived and made available to him."[104] In this regard, Spencer writes:

> Learning is not implanted by one who knows into one who does not know. That which is learned is created by the learner from his own experiencing and with his own abilities. Learning emerges and is developed and refined through experiencing. In a very real sense, experience is not just the "best teacher"—it is the only teacher.[105]

Drawing upon this philosophy, Spencer contends that teachers should provide children not with ready-made answers but with unlimited opportunities for "sensing, experimenting, inventing, discovering, testing,

and verifying," creating a "learning laboratory" based on the child's own mental and physical activity. Teachers should create an environment that activates the child's "inner quest" for knowledge.[106]

Piaget, too, believes that teachers should not attempt to impose knowledge on children through direct instruction. In one of his rare comments on education, Piaget strikes a note very similar to Spencer.

> The principal goal of education is to create men who are capable of doing new things, not simply of repeating what other generations have done—men who are creative, inventive, and discoverers. The second goal of education is to form minds which can be critical, can verify, and not accept everything they are offered....So we need pupils who are active, who learn early to find out by themselves, partly by their own spontaneous activity and partly through material we set up for them; who learn early to tell what is verifiable and what is simply the first idea to come to them.[107]

Conclusion

This paper has outlined some of the implications for a broadly based early childhood reading curriculum that follow from the work of Peter Spencer and Jean Piaget. In many respects, there is little that is particularly new in the proposals that have been made. Eighty years ago, John Dewey criticized the contemporary "fetich" in primary education with the direct teaching of reading. This overconcern with reading was manifest, according to Dewey, in "trivial" school primers, "benumbing" drill, and "mechanical" procedures divorced from the child's interests, needs, and developmental level. In place of such a curriculum, Dewey called for educators to broaden the young child's personal experience, to provide a foundation for the appreciation of books rather than a "slavish dependence" on them. Toward that end, Dewey proposed that instead of teaching reading directly, primary-grade educators should provide children with a multitude of opportunities for experiencing and representing life, for drawing, playing music,

painting, modeling, studying nature, and writing.[108]

Dewey's ideas have relevance today. Given the lack of effectiveness of current methods aimed at the direct teaching of reading, given the dismal decline of reading scores at every level of education, and given the intervention of politics and corporate enterprise into reading instruction, perhaps it is time for a radical—or merely progressive—approach to reading. It may be unduly optimistic to believe, but perhaps Dewey's time has come.

Notes

1. Howard Gruber and Jacques Vonèche, The Essential Piaget, (New York: Basic Books, 1977).

2. Irene Athey, "Developmental Processes and Reading Processes—Invalid Inferences from the Former to the Latter," in Theoretical Models and Processes of Reading, eds. Harry Singer and Robert Ruddell, (Newark, Delaware: International Reading Association, 1976), p. 735.

3. Peter Spencer, "The Claremont Reading Conference: Its Message and Educational Implications," Claremont Reading Conference Yearbook 37, 1973, pp. 214-215.

4. Ibid. p. 213.

5. Peter Spencer, Reading Reading, (Claremont, CA.: Alpha Iota Chapter of Pi Lambda Theta, 1970), p. 37.

6. Ibid. p. 43.

7. Spencer, "Claremont Reading Conference," p. 211.

8. Spencer, Reading Reading, p. 57.

9. Spencer, "Claremont Reading Conference," p. 211.

10. Elliot Eisner, "Reading and the Creation of Meaning," Claremont Reading Conference Yearbook 40, 1976, pp. 1-15.

11. Roach Van Allen, "Reading is Creative Living," Claremont Reading Conference Yearbook 38, 1974, pp. 1-9.

12. Malcolm Douglass, "Reading for Life," Claremont Reading Conference Yearbook 42, 1978, pp. 1-19; Malcolm Douglass, "Introduction to the Yearbook," Claremont Reading Conference Yearbook 38, 1974, p. 1.

13. Jean Piaget, "Autobiography," in Piaget Sampler, ed. Sarah Campbell, (New York: Wiley, 1976) p. 121.

14. Max Wertheimer, Productive Thinking, (New York: Harper, 1945).

15. Kurt Koffka, Principles of Gestalt Psychology, (New York: Harcourt, 1935).

16. Wolfgang Kohler, The Mentality of Apes, (New York: Harcourt, 1925).

17. Kurt Lewin, "Behavior and Development as a Function of the Total Situation," in Manual of Child Psychology, 2nd Edition, ed. Leonard Carmichael, (New York: Wiley, 1946), pp. 918-970.

18. Raymond Wheeler and Francis Perkins, Principles of Mental Development, (New York: Crowell, 1932).

19. Koffka, Principles of Gestalt Psychology, pp. 177-210.

20. Ibid. pp. 167-168.

21. Ibid. pp. 598-614.

22. Ibid. pp. 167-174.

23. Wheeler and Perkins, Principles of Mental Development, pp. 18-19.

24. Ibid. pp. 72-98.

25. Spencer, Reading Reading, p. 50.

26. Jean Piaget, Structuralism, (New York: Basic Books, 1970).

27. Jean Piaget and Barbel Inhelder, The Psychology of the Child, (New York: Basic Books, 1969), pp. 5-6.

28. Jean Piaget, Science of Education and the Psychology of the Child, (New York: Grossman, 1970), pp. 153-159.

29. Piaget, Structuralism, p. 4.

30. Jean Piaget, "Development and Learning," in Readings in Child Behavior and Development, eds. Celia Lavatelli and Faith Stendler, (New York: Harcourt,1972), pp. 38-46.

31. Piaget and Inhelder, The Psychology of the Child, pp. 152-159; Piaget, "Development and Learning," pp. 38-46.

32. Wheeler and Perkins, Principles of Mental Development, p. 122.

33. Peter Spencer, "The Nature of the Reading Process and Building Balanced Reading Programs," Claremont Reading Conference Yearbook 25, 1961, p.4.

34. Barbel Inhelder and Jean Piaget, The Early Growth of Logic in the Child: Classification and Seriation, (London: Routledge and Kegan Paul, 1964), pp. 8-10.

35. Piaget, Science of Education, p. 38.

36. Wheeler and Perkins, Principles of Mental Development, pp. 146-147.

37. Spencer, "Claremont Reading Conference," p. 213.

38. Piaget, "Development and Learning," p. 42.

39. Spencer, Reading Reading, p. 77.

40. Piaget, "Development and Learning," pp. 42-46.

41. Piaget and Inhelder, The Psychology of the Child, pp. 156-159.

42. Spencer, "The Nature of the Reading Process," p. 4.

43. Spencer, "Claremont Reading Conference," p. 212.

44. Elizabeth Hall, "A Conversation with Jean Piaget," in Readings in Developmental Psychology Today, ed. Robert Schell, (New York: Random House, 1977), p. 9.

45. Malcolm Douglass, "Introduction to the Yearbook," Claremont Reading Conference Yearbook 39, 1975, p. vi.

46. Spencer, Reading Reading, pp. 88-89.

47. Spencer, "Claremont Reading Conference," p. 213.

48. Ibid.

49. Spencer, Reading Reading, p. 27.

50. Ibid., p. 7.

51. Piaget, Science of Education, p. 29.

52. Piaget, Psychology of the Child, pp. 57-91.

53. Jean Piaget, Play, Dreams, and Imitation in Childhood, (New York: W. W. Norton, 1951), p. 63.

54. Piaget, Psychology of the Child, pp. 53-54.

55. Piaget, Play, Dreams, and Imitation, p. 111.

56. Piaget, Psychology of the Child, pp. 63-68.

57. Piaget, Play, Dreams, and Imitation, pp. 288-289.

58. Jean Piaget and Barbel Inhelder, Mental Imagery in the Child, (New York: Basic Books, 1971), pp. 351-390.

59. Ibid., p. 381.

60. Piaget, Play, Dreams, and Imitation, p. 71.

61. Ibid., pp. 181-182.

62. Piaget and Inhelder, Mental Imagery, pp. 351-355.

63. Piaget, Play, Dreams, and Imitation, p. 222.

64. Ibid.

65. Jean Piaget, The Language and Thought of the Child, (New York: World, 1955), pp. 63-68.

66. Spencer, Reading Reading, p. 53.

67. Ibid.

68. Ibid., p. 27.

69. Ibid., p. 72.

70. Spencer, "The Nature of the Reading Process," p. 3.

71. Malcolm Douglass, "A Little Revolution Now and Then..." Claremont Reading Conference Yearbook 40, 1976 , p. 38; Malcolm Douglass, "The Many Facets of Reading," Claremont Reading Conference Yearbook 35, 1971 , p. 11.

72. Robert Collier, "Play — in the Classroom?" Claremont Reading Conference Yearbook 40, 1976 , p. 162.

73. Kenneth Goodman, "Manifesto for a Reading Revolution," Claremont Reading Conference Yearbook 40, 1976 , p. 17.

74. Robert McCloskey, Make Way for Ducklings, (New York: Viking Press, 1941).

75. Spencer, Reading Reading, pp. 71-72.

76. Ibid., p. 97.

77. Roach Van Allen, "Concept Development of Young Children in Reading Instruction," Claremont Reading Conference Yearbook 24, 1959, pp. 12-21; Roach Van Allen, "The Language Experience Approach to Reading," Claremont Conference Yearbook 25, 1960, pp. 59-66; Roach Van Allen, "Bring Your Own: An Invitation to All Children to Bring Their Personal Language to School," Claremont Reading Conference Yearbook 31, 1966, pp. 25-32; Roach Van Allen, "All Things Considered...Language Production is Basic to Reading," Claremont Reading Conference Yearbook 41, 1977, pp. 11-19.

78. Malcolm Douglass, "A Little Revolution Now and Then...," Claremont Reading Conference Yearbook 40, 1976, p. 40; Malcolm Douglass, "The Many Facets of Reading," Claremont Reading Conference Yearbook 35, 1971, p. 11.

79. Malcolm Douglass, "On Reading: The Great American Fetish," Chapter in a Forthcoming Publication of the National Art Education Association.

80. Jean Piaget, Piaget Rediscovered: A Report of the Conference on Cognitive Studies and Curriculum Development (Ithaca, N.Y.: School of Education, Cornell University, 1964), p. 3.

81. Ibid., p. 4.

82. Spencer, Reading Reading, p. 80.

83. Margaret Smart, "Piaget, Language, and Reading," Claremont Reading Conference Yearbook 35, 1971, pp. 16-21.

84. Beverly Kilman, "Play as Precursor to Reading," Claremont Reading Conference Yearbook 41, 1977, p. 187.

85. Robert Collier, "Play — in the Classroom?" Claremont Reading Conference Yearbook 40, 1976, p. 161.

86. David Elkind, "Cognitive Development and Reading," Claremont Reading Conference Yearbook 38, 1974, p. 18.

87. Spencer, Reading Reading, p. 70.

88. Ibid., p. 81.

89. Wheeler and Perkins, Principles of Mental Development, p. 451.

90. Ibid., p. 456.

91. Ibid., p. 465.

92. Spencer, Reading Reading, p. 93.

93. Piaget, Language and Thought of the Child, p. 162.

94. Ibid.

95. H. Sinclair-de Zwart, "Language Acquisition and Cognitive Development," in Cognitive Development and the Acquisition of Language, ed. Timothy Moore, (New York: Academic Press, 1973), pp. 9-26.

96. Hans Furth, Piaget for Teachers, (Englewood Cliffs, N.J.: Prentice Hall, 1970), p. 6.

97. Ibid., p. 5.

98. David Elkind, Children and Adolescents: Interpretive Essays on Jean Piaget, (New York: Oxford University Press, 1974), pp. 174-175.

99. Lee Jenkins, "The Relationships Between Cognitive Development, Language Development, and Reading Ability in Children Ages 6 to 9." Unpublished Doctoral Dissertation, Claremont Graduate School, 1978.

100. Dolores Durkin, Children Who Read Early, (New York: Teachers College Press, Columbia University, 1966).

101. Spencer, Reading Reading, p. 54.

102. Ibid., p. 91.

103. Peter Spencer, Building Mathematical Competence in the Elementary School, Revised Edition, (New York: Holt, 1966), p. 3.

104. Ibid., p. 393.

105. Peter Spencer, Building Mathematical Concepts in the Elementary School, (New York: Holt, 1952), p. 28.

106. Ibid., pp. 3-5.

107. quoted by Eleanor Duckworth, "Piaget Rediscovered," in Piaget Rediscovered. A Report of the Conference on Cognitive Studies and Curriculum Development, (Ithaca, N.Y.: School of Education, Cornell University, 1964), p. 5.

108. summarized in Edmund Huey, The Psychology and Pedagogy of Reading, (New York: Macmillan, 1908), pp. 304-306.

Bibliography

Allen, R. V. "Concept Development of Young Children in Reading Instruction." Claremont Reading Conference Yearbook 24 (1959): 12-21.

Allen, R. V. "The Language Experience Approach to Reading." Claremont Reading Conference Yearbook 25 (1960): 59-66.

Allen, R. V. "Bring Your Own: An Invitation to All Children to Bring Their Personal Language to School." Claremont Reading Conference Yearbook 31 (1966): 25-32.

Allen, R. V. "Reading is Creative Living." Claremont Reading Conference Yearbook 38 (1974): 1-9.

Allen, R. V. "All Things Considered...Language Production is Basic to Reading." Claremont Reading Conference Yearbook 41 (1977): 11-19.

Athey, I. "Developmental Processes and Reading Processes—Invalid Inferences from the Former to the Latter." In H. Singer and R. Ruddell (eds.) Theoretical Models and Processes of Reading. Newark, Delaware: International Reading Association, 1976.

Collier, R. "Play—in the Classroom?" Claremont Reading Conference Yearbook 40 (1976): 160-165.

Douglass, M. "The Many Facets of Reading." Claremont Reading Conference Yearbook 35 (1971): 1-15.

Douglass, M. "Reading Between and Beyond the Lines." Claremont Reading Conference Yearbook 37 (1973): 1-11.

Douglass, M. Reading in Education: A Broader View. Columbus, Ohio: Merrill, 1973.

Douglass, M. "A Little Revolution Now and Then..." Claremont Reading Conference Yearbook 40 (1976): 29-42.

Douglass, M. "Reading for Life." Claremont Reading Conference Yearbook 42 (1978): 1-19.

Douglass, M. "On Reading: The Great American Fetish." Chapter in a Forthcoming Publication of the National Art Education Association.

Duckworth, E. "Piaget Rediscovered." In R. Ripple and V. Rockcastle (eds.) Piaget Rediscovered. A Report of the Conference on Cognitive Studies and Curriculum Development. Ithaca, N.Y.: School of Education, Cornell University, 1964.

Durkin, D. Children Who Read Early. New York: Teachers College Press, Columbia University, 1966.

Eisner, E. "Reading and the Creation of Meaning." Claremont Reading Conference Reading Yearbook 40 (1976): 1-15.

Elkind, D. "Cognitive Development and Reading." Claremont Reading Conference Yearbook 38 (1974): 10-20.

Elkind, D. Children and Adolescents: Interpretive Essays on Jean Piaget. New York: Oxford University Press, 1974.

Furth, H. Piaget for Teachers. Englewood Cliffs, N.J.: Prentice-Hall, 1970.

Goodman, K. "Manifesto for a Reading Revolution." Claremont Reading Conference Yearbook 40 (1976): 15-20.

Gruber, H. and Vonèche, J. The Essential Piaget. New York: Basic Books, 1977.

Hall, E. "A Conversation with Jean Piaget." In R. Schell (ed.), Readings in Developmental Psychology Today. New York: Random House, 1977.

Huey, E. The Psychology and Pedagogy of Reading. New York: Macmillan, 1908.

Inhelder, B. and Piaget, J. The Early Growth of Logic in the Child: Classification and Seriation. London: Routledge and Kegan Paul, 1964.

Jenkins, L. "The Relationships Between Cognitive Development, Language Development, and Reading Ability in Children Ages 6 to 9." Unpublished Doctoral Dissertation, Claremont Graduate School, 1978.

Kilman, B. "Play as Precursor to Reading." Claremont Reading Conference Yearbook 41 (1977): 180-188.

Koffka, K. Principles of Gestalt Psychology. New York: Harcourt, 1935.

Kohler, W. The Mentality of Apes. New York: Harcourt, 1925.

Lewin, K. "Behavior and Development as a Function of the Total Situation," In L. Carmichael (ed.) Manual of Child Psychology, 2nd Edition. New York: Wiley, 1946.

McCarthy, D. "Language Development in Children," In L. Carmichael (ed.) Manual of Child Psychology. New York: Wiley, 1946.

Piaget, J. The Language and Thought of the Child. New York: World, 1955.

Piaget, J. Play, Dreams and Imitation. New York: Norton, 1962.

Piaget, J. "The Development of Mental Imagery," In R. Ripple and V. Rockcastle (eds.) Piaget Rediscovered: A Report of the Conference on Cognitive Studies and Curriculum Development. Ithaca, N.Y.: School of Education, Cornell University, 1964.

Piaget, J. Six Psychological Studies (D. Elkind, ed.) New York: Random House, 1967.

Piaget, J. Science of Education and the Psychology of the Child. New York: Grossman, 1970.

Piaget, J. Structuralism. New York: Basic Books, 1970.

Piaget, J. "Development and Learning," In C. Lavatelli and F. Stendler (eds.) Readings in Child Behavior and Developement. New York: Harcourt, 1972.

Piaget, J. and Inhelder, B. The Psychology of the Child. New York: Basic Books, 1969.

Piaget, J. and Inhelder, B. Mental Imagery in the Child. New York: Basic Books, 1971.

Sinclair-de Zwart, H. "Language Acquisition and Cognitive Development." In T. Moore (ed.) Cognitive Development and the Acquisition of Language. New York: Academic Press, 1973.

Smart, M. "Piaget, Language, and Reading," Claremont Reading Conference Yearbook 35 (1971): 16-21.

Spencer, P. "Reading is Creative Living," Claremont Reading Conference Yearbook 22 (1957): 11-21.

Spencer, P. "The Nature of the Reading Process and Building Balanced Reading Programs," Claremont Reading Conference Yearbook 25 (1961): 1-10.

Spencer, P. Reading Reading. Claremont, CA: Alpha Iota Chapter of Pi Lambda Theta, 1970.

Spencer, P. "The Claremont Reading Conference: Its Message and Educational Implications," Claremont Reading Conference Yearbook 37 (1973): 205-215.

Spencer, P. and Brydegaard, M. Building Mathematical Concepts in the Elementary School. New York: Holt, 1952.

Spencer, P. and Brydegaard, M. Building Mathematical Competence in the Elementary School, Revised Edition. New York: Holt, 1966.

Wertheimer, M. Productive Thinking. New York: Harper, 1945.

Wheeler, R. and Perkins, F. Principles of Mental Development. New York: Thomas Crowell, 1932.